

Customer No.: 31561
Docket No.: 10788-US-PA
Application No.: 10/709,923

AMENDMENTS

In The Claims

Claims 1-5. (cancelled)

6. (currently amended) A flip chip package process, comprising:

providing a substrate having a first surface and an opposite second surface, wherein the substrate includes a plurality of first contacts on the first surface of the substrate and a plurality of second contacts on the second surface of the substrate, and wherein the first contacts are electrically connected to the second contacts;

forming a plurality of bumps on the first surface of the substrate, wherein each bump is connected to one first contact;

providing a chip having a plurality of bonding pads corresponding to the bumps, wherein a metal layer is disposed on surfaces of the bonding pads, without having additional bumps thereon;

arranging the chip onto the first surface of the substrate by flipping the chip, so that the bonding pads are connected to the bumps; and

reflowing the bumps.

7. (original) The process of claim 6, further comprising disposing a plurality of solder balls on the second surface of the substrate, wherein the solder balls are connected to the second contacts.

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8. (original) The process of claim 6, further comprising disposing a plurality of pins on the second surface of the substrate, wherein the pins are connected to the second contacts.

9. (original) The process of claim 6, wherein the method for forming the bumps comprises implanting tin globes and treating surfaces of the first contacts with a flux before implanting the tin globes.

10. (currently amended) The process of claim 6, wherein the method for forming the bumps comprises printing a tin paste onto surfaces of the first contacts and reflowing the tin paste. [[.]]

11. (original) The process of claim 6, wherein the method for forming the bumps comprises forming the bumps on surfaces of the first contacts by electroplating, thus forming the bumps on the substrate without reflowing.

12. (original) The process of claim 6, wherein an adhesive layer is formed on the surfaces of the bonding pads of the chip before the chip is arranged to the substrate, and wherein after the chip is arranged to the substrate, the adhesive layer wraps around the bumps.

13. (original) The process of claim 6, further comprising filling an underfill material between the chip and the substrate, wherein the underfill material covers the bumps.

14. (original) The process of claim 6, wherein the metal layer is a nickel layer formed by electroless plating.